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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/590,668

08/25/2006

Andrew Childs

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05/27/2008

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EXAMINER

WANG, CHUN CHENG

ART UNIT

PAPER NUMBER

4171

MAIL DATE

DELIVERY MODE

05/27/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/590,668	Applicant(s) CHILDS ET AL.	
	Examiner Chun-Cheng Wang	Art Unit 4171	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>03/16/2007</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

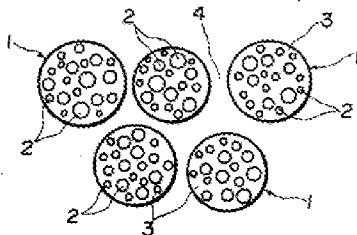
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-7, 9 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Fukuda (US 4254105).

3. Regarding claim 1: Applicants recite a polyaphron dispersion comprising an external phase and polyaphrons having an internal phase, the internal phase comprising (i) a first phase which is liquid and (ii) a second phase which is liquid or gaseous.

Fukuda discloses a multiple emulsion, Fig. 1, having a dispersing form of water-phase/oil-phase/water-phase and the multiple emulsions, i.e. polyaphrons, consisting of a dispersed phase and a dispersion medium, of which the dispersed phase is a water-in-oil type emulsion formed by dispersing

Fig. 1



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water phase into oil phase which consists of an oil component and a oil-soluble emulsifier having such a hydrophile-lipophile balance that the oil component forms a dispersion medium of the water-in-oil type emulsion, and of which the dispersion medium is an aqueous solution which contains an water-soluble emulsifier having such a hydrophile-lipophile balance that the oil component forms a dispersion medium of an oil-in-water type emulsion and having such concentration that the oil-soluble emulsifier does not dissolved therein (Abstract). The W/O/W multiple emulsion prepared according to this invention is shown in FIG. 1, in which the W/O/W emulsion consist of W/O emulsion 1 as a dispersed phase (i.e., internal phase) having internal water phase 2 dispersed in oil phase 3, and external water phase 4 as a dispersion medium (i.e., continuous phase) (column 7, lines 25-29).

4. Claims 2-4 and 6 depend on claim 1: Applicants recite the external phase is aqueous (claim 2), the internal phase comprises at least two liquid phases (claim 3), the internal phase comprises an aqueous phase and a non-aqueous phase (claim 4) and the internal phase comprises an emulsion (claim6).

5. Fukuda discloses a multiple emulsion having a dispersing form of water-phase/oil-phase/water-phase (Abstract, line 1) with water as external phase and water-in-oil emulsion as internal phase with two liquid phases, oil and water.

6. Claim 5 depends on claim 4: Applicants recite the internal phase comprises a single aqueous phase and a single non-aqueous phase.

Fukuda discloses an oil-in-water emulsion (Abstract) as internal phase.

7. Claim 7 depends on claim 1: Applicants recite the internal phase comprises polyaphron.

Fukuda discloses a multiple emulsion having a dispersing form of water-phase/oil-phase/water-phase (Abstract, line 1) with water-in-oil emulsion as internal phase with two liquid phases, i.e. polyaphron.

8. Claim 9 depends on claim 1: Applicants recite the internal phase comprises at least 60 wt % of an aqueous phase.

Fukuda discloses the W/O/W emulsion which consists of the W/O emulsion as a dispersed phase and the aqueous solution of the water soluble emulsifier as a dispersion medium, the volume percentage of the W/O emulsion may reach up to 75 vol. % (column 6, lines 36-37). And a 76 wt% of w/o emulsion could be calculated from the data of example (Example 3).

9. Claim 11 depends on claim 1: Applicants recite A process for preparing a polyaphron dispersion as defined in any one of the preceding claim 1, which comprises: a. forming the internal phase; and b. forming a polyaphron dispersion comprising an external phase and the internal phase prepared in step a.

10. Fukuda discloses sorbitan mono-stearate and sorbitan mono-oleate were added to soft liquid paraffin and dissolved therein, and then 220 ml of water was added to the solution with stirring. The resulting mixture was further agitated to prepare W/O emulsion, i.e. prepare the internal phase. Sucrose fatty acid ester was added to water to prepare aqueous solution. To the aqueous solution, the W/O emulsion was added under agitation. Subsequently, the mixture was agitated by a homomixer for 10 minutes to obtain W/O/W emulsions, i.e. forming polyaphron dispersion, (Example 3).

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11. Claims 8 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Li et al. (US 3779907).

12. Claim 8 depends on claim 1: Applicants recite a polyaphron dispersion comprising an external phase and polyaphrons having an internal phase, the internal phase comprising (i) a first phase which is liquid and (ii) a second phase which is liquid or gaseous (claim 1) and the internal phase additionally comprises a solid phase (claim 8).

Li et al. disclose a process for the removal of dissolved species from aqueous solutions, which comprises contacting the aqueous solution with an emulsion, the emulsion comprising an exterior phase, act as a liquid membrane (column 2, lines 2-3), which is characterized as being immiscible with the aqueous solution and yet permeable to the dissolved species, and an interior phase which contains a reactant capable of converting the dissolved species to a non-permeable form (Abstract). The aqueous solution is the external phase of the polyaphron dispersion and the emulsion which is the internal phase has two immiscible liquids. And various dissolved species may be precipitated, i.e. solid, in the interior phase (column 3, lines 18-19).

13. Claim 10 depends on claim 1: Applicants recite polyaphron dispersion that one component of the external phase is capable of reacting with a component of the internal phase upon the polyaphrons being disrupted or destroyed.

Li et al. disclose the interior phase which contains a reactant capable of converting the dissolved species in the aqueous solution to a non-permeable form (Abstract), they will react with each other when the polyaphrons being disrupted or destroyed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chun-Cheng Wang whose telephone number is (571)270-5459. The examiner can normally be reached on Monday to Friday w/alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on 571-272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. Lawrence Tarazano/
Supervisory Patent Examiner, Art Unit 4171

Chun-Cheng Wang
Examiner, Art Unit 4171

/ccw/